Dr. Ryan J. Giordano

CONTACT
INFORMATION

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EDUCATION

University of California Berkeley, CA USA   2013–2019
Ph.D., Statistics. Advisors: M. I. Jordan, J. McAuliffe, T. Broderick
Thesis: *On the Local Sensitivity of M-Estimation: Bayesian and Frequentist Applications*

London School of Economics, London, UK   2006–2008
MSc., Econometrics.

University of Illinois Urbana-Champaign, IL, USA   1997–2002
BA., Mathematics.
BS., Theoretical and Applied Mechanics.

PROFESSIONAL
EXPERIENCE

University of California Berkeley, CA USA   2023–present
Assistant professor of statistics.

Massachusetts Institute of Technology, Cambridge, MA USA   2019–2023
Department of EECS, Laboratory for Information & Decision Systems
Postdoctoral Research Fellow. Advisor: Tamara Broderick

Google Inc., Mountain View, CA USA   2009–2013
Senior Engineer, Quantitative Analysis

Macquarie Group, London, UK   2008
Risk Management Intern

United States Peace Corps, Kokshetau, KZ   2004–2006
Education Volunteer, successful completion of service

Hewlett-Packard, Boise, ID   2002–2004
Lifetest Coordinator and Reliability Engineer

HONORS AND
AWARDS

Selected for the Nov 5th 2021 Gary Chamberlain Online Seminar in Econometrics (2021)
Notable Paper Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Bayesian Nonparametrics Conference (2019)
Student Paper Award, ASA Section on Bayesian Statistical Science (2018)
Travel Award, International Society for Bayesian Analysis (ISBA) (2018)
Berkeley Institute for Data Science Fellow (2017–19)
Junior Travel Support Grant, International Society for Bayesian Analysis (ISBA) Bayes Comp (2016)
Spotlight Paper, Neural Information Processing Systems (NeurIPS) (2015)
Outstanding Graduate Student Instructor Award (2015)
Travel Award, Neural Information Processing Systems Workshop on Variational Inference (2014)
Hertz Foundation Graduate Fellowship Finalist (2014)
Google Operating Committee Award (2010)
Advanced-high speaker of Russian in Peace Corps Aptitude Test (2006)
Advanced-mid speaker of Kazakh in Peace Corps Aptitude Test (2006)
Selected as a Peace Corps "Success Story" for a congressional report (2005)
Best Project, Undergraduate Mechanics Research Conference (2002)
Best Presentation, Undergraduate Mechanics Research Conference (2002)
Seely, Sinclair, Stippes, TAM Merit Scholarships (1998–2002)

BIBHERE

*   Publications

Berlinghieri, R., Trippe, B., Burt, D., **Giordano, R.**, Srinivasan, K., Özgökmen, T., Xia, J., Broderick, T., "Gaussian processes at the Helm(holtz): A more fluid model for ocean currents". In: *Proceedings of the 40th International Conference on Machine Learning.* Proceedings of Machine Learning Research. PMLR, 2023.

Giordano, R., Broderick, T., "The Bayesian Infinitesimal Jackknife for Variance". In: *arXiv preprint arXiv:2305.06466* (2023).

Giordano, R., Ingram, M., Broderick, T., "Black Box Variational Inference with a Deterministic Objective: Faster, More Accurate, and Even More Black Box". In: *arXiv preprint arXiv:2304.05527* (2023).

Giordano, R., Liu, R., Jordan, M. I., Broderick, T., "Evaluating Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics (with Discussion)". In: *Bayesian Analysis* 18.1 (2023), pp. 287–366.

Kasprzak, M., **Giordano, R.**, Broderick, T., "How good is your Gaussian approximation of the posterior? Finite-sample computable error bounds for a variety of useful divergences". In: *arXiv preprint arXiv:2209.14992* (2022).

Giordano, R., Jordan, M. I., Broderick, T., "A higher-order swiss army infinitesimal jackknife". In: *arXiv preprint arXiv:1907.12116* (2019).

Giordano, R., Stephenson, W., Liu, R., Jordan, M. I., Broderick, T., "A Swiss Army Infinitesimal Jackknife". In: *The 22nd International Conference on Artificial Intelligence and Statistics.* 2019, pp. 1139–1147.

Giordano, R., Broderick, T., Jordan, M. I., "Covariances, Robustness, and Variational Bayes". In: *Journal of Machine Learning Research* 19.51 (2018), pp. 1–49. URL: http://jmlr.org/papers/v19/17-670.html.

Regier, J., Pamnany, K., Fischer, K., Noack, A., Lam, M., Revels, J., Howard, S., **Giordano, R.**, Schlegel, D., McAuliffe, J., "Cataloging the Visible Universe through Bayesian Inference at Petascale". In: *2018 IEEE International Parallel and Distributed Processing Symposium (IPDPS).* IEEE. 2018, pp. 44–53.

Giordano, R., Broderick, T., Meager, R., Huggins, J., Jordan, M. I., "Fast robustness quantification with variational Bayes". In: *arXiv preprint arXiv:1606.07153* (2016).

Giordano, R., Broderick, T., Jordan, M. I., "Linear response methods for accurate covariance estimates from mean field variational Bayes". In: *Advances in Neural Information Processing Systems.* 2015, pp. 1441–1449.

Winther, R., **Giordano, R.**, Edge, M., Nielsen, R., "The mind, the lab, and the field: Three kinds of populations in scientific practice". In: *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 52 (2015), pp. 12–21.

INVITED TALKS	Flatiron institute Bayesian Reading Group	May 2023
	Black Box Variational Inference with a Deterministic Objective	
	BayesComp 2023 (Robustness to Model Misspecification session)	March 2023
	Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	
	Stanford Statistics Seminar	July 2022
	An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Make a Big Difference?	
	NeurIPS 2021 Bayesian Deep Learning Workshop	December 2021
	Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	
	Johns Hopkins Bayesian Learning And Spatial Temporal (BLAST) working group	October 2021
	Variational Methods for Latent Variable Problems	
	New England Statistical Society (NESS) annual meeting	October 2021
	Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	
	Joint Statistical Meetings (JSM)	August 2021
	An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?	
	International Society for Bayesian Analysis Annual Meeting	June 2021
	Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	
	ISBA-BNP series webinar	May 2021
	Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics	
	Harvard Graduate School of Education Miratrix CARES lab	Feubruary 2021
	An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?	
	Splunk Statistics Seminar Series	October 2019
	A Higher-Order Swiss Army Infinitesimal Jackknife	
	Google Statistics Journal Club	September 2019
	On the Local Sensitivity of M-estimation: Bayesian and Frequentist Applications	
	Perlmutter Research Group	June 2019
	Variational Methods for Latent Variable Problems	
CONTRIBUTED TALKS	BAYSM Bayesian Young Statisticians Meeting	August 2021
	Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics	
	BAYSM Bayesian Young Statisticians Meeting	November 2020
	Effortless Frequentist Covariances of Posterior Expectations in Stan	
	StanCon	July 2020
	Effortless Frequentist Covariances of Posterior Expectations in Stan	
	Berkeley Statistics Student Seminar Series	April 2019
	Sensitivity and Uncertainty in Variational Bayes with an Application to the EM Algorithm	
	12th International Conference on Bayesian Nonparametrics, Oxford, UK	June 2019
	Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics	
	Berkeley Institute for Data Science Lunchtime Seminar Series	October 2018
	Sensitivity, Uncertainty, and Automatic Differentiation	
	Berkeley Institute for Data Science Lunchtime Seminar Series	July 2018

Bayesian Inference and Inverse Problems

StanCon   January 2018
Automatic Robustness Measures in Stan

Berkeley BSTARS Conference   March 2017
How Bad Could it Be? Worst-case Prior Sensitivity Estimates for Variational Bayes

Berkeley BSTARS Conference   March 2016
Measuring Robustness with Variational Bayes

Berkeley–Stanford Student Joint Colloquium   November 2014
Covariance Matrices for Mean Field Variational Bayes

Joint Statistical Meetings (JSM)   August 2013
Estimating Average Proportional Changes in Large, Sparse Data

PROFESSIONAL SERVICE	**Student Leadership**	

University of California, Berkeley, Statistics Department
- Diversity Taskforce Member   2018–2019
- Graduate Student Mentor   2017–2019
- Diversity Committee Member   2017
- Co-organizer of the Gender and Diversity Roundtable   2016–2018
- Student Seminar Committee Member   2014–2017

Universty of Illinois, Urbana-Champaign, Engineering Mechanics Department
- President, Student Society for Experimental Mechanics   2000–2002
- Organizer, Free University Opera for Engineering Students   2001–2002

Journal Reviewing
- Bayesian Analysis
- Journal of Machine Learning Research

Conference Reviewing
- Advances in Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- Advances in Approximate Inference (NeurIPS-adjacent workshop)
- I Can't Believe It's Not Better (NeurIPS workshop)

TEACHING

University of California, Berkeley, CA, USA
- Teaching Assistant, STAT215 Applied Statistics (Graduate-level)   Fall 2014

Prison University Project, San Quentin State Prison, CA, USA
- Volunteer math teacher   Fall 2015, Spring 2016, Fall 2017

Kokshetau Elementary School #3, Kokshetau, Akhmola, Kazakhstan
- Elementary school teacher of mathematics and English as a second language   2004–2006

University of Illinois, Urbana-Champaign, IL, USA
- Teaching Assistant, Mechanics of Materials Lab   Fall 1999
- Teaching Assistant, Introduction to Statics   Spring 1999